



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control
and Prevention (CDC)

EPA Region 5 Records Ctr.



226951

Memorandum

Date March 27, 2000

From Chief, Program Evaluation, Records, and Information Services Branch, DHAC, ATSDR

Subject Health Consultation

To Louise A. Fabinski
Senior Regional Representative, ATSDR, Region V

Please find enclosed five copies of the corrected health consultation, Lindsay Light II, Chicago, Cook County, Illinois, dated February 22, 2000, to replace the documents previously received.

We are sorry for any inconvenience this may have caused you.

Thank you.

For Marie Adams
for Max M. Howie, Jr.

Enclosures

cc:	A. Wargo	K. Skipper
	R. Gillig	G. Godfrey
	S. Rodenbeck	R. C. Williams

You May Contact ATSDR TOLL FREE at
1-888-42ATSDR

or

Visit our Home Page at: <http://atsdr1.atsdr.cdc.gov:8080/>

To: Jeannie Griffin

Health Consultation

LINDSAY LIGHT II

CHICAGO, COOK COUNTY, ILLINOIS

CERCLIS NO. ILD0000002212

FEBRUARY 22, 2000

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

You May Contact ATSDR TOLL FREE at
1-888-42ATSDR

or

Visit our Home Page at: <http://atsdr1.atsdr.cdc.gov:8080/>

HEALTH CONSULTATION

LINDSAY LIGHT II

CHICAGO, COOK COUNTY, ILLINOIS

CERCLIS NO. ILD0000002212

Prepared by:

Illinois Department of Public Health
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

BACKGROUND AND STATEMENT OF ISSUES

The U.S. Environmental Protection Agency (USEPA) requested that the Illinois Department of Public Health (IDPH) perform a health consultation for the public rights-of-way adjacent to the Lindsay Light II site at 316 East Illinois Street, Chicago, Cook County, Illinois. IDPH prepared this evaluation using site-specific information provided by USEPA and the Illinois Environmental Protection Agency (IEPA). This health consultation includes information on the evaluation of public health hazards posed by current conditions at the rights-of-way adjacent to the site.

Site Description and History

The Lindsay Light II site is approximately 3 acres and is bordered by Grand Avenue, Illinois Street, McClurg Court, and Columbus Drive in downtown Chicago (Attachment 1). The Lindsay Light and Chemical Company once occupied the property. The company manufactured incandescent gas mantles for home and street lighting. The process required dipping gauze mantle bags into solutions containing thorium nitrate. Thorium is a radioactive metal and thorium-232 is the most common form of the element. Those activities occurred from about 1910 until 1936 at 161 East Grand Avenue. Sometime after 1933, Lindsay Light moved to West Chicago, Illinois, and was later purchased by American Potash, which in turn was purchased by the Kerr-McGee Chemical Company.

In May 1994, the property owner, The Chicago Dock & Canal Trust, studied the extent of contamination. The study showed several areas with elevated levels of gamma radiation. At the time of the study, the site was a public parking lot, and manned cash booths were present on the property. From June 30 to July 30, 1993, each manned cash booth was monitored with a thermoluminescent dosimeter. The results for the booths showed the dose in booth one to be about 0.12 milliSieverts (mSv) per year and the dose in booth two to be effectively zero. Because results for both booths were extremely low (the acceptable level of exposure for non-radiation workers is 1 mSv per year), the attendants were not being exposed to elevated levels of radiation.

When the parking lot was to be removed to facilitate future development of the property, the owners determined that the best way to reduce the gamma radiation levels was to conduct extensive removal activities from 12 areas of the site. In June 1996, on-site thorium was investigated and removed. Clean-up of the property consisted of removing contaminated soil so that a level of 0.2 becquerels (Bq) over background levels of radiation for the top 5 centimeters and each 15-centimeter layer of soil beneath was achieved.

During the clean-up, the public rights-of-way adjacent to the property were found to also be contaminated with elevated levels of thorium residuals. Levels as high as 22 Bq per gram of soil were detected under the rights-of-way. That level is nearly 300 times background radiation levels. Water, gas, sewer, electric, and other utilities currently run through the public rights-of-way. If those utilities had to be accessed for repair, workers could be exposed to thorium-

contaminated soil. USEPA Region 5 is working with the city of Chicago to develop an agreement to reduce the chance of future exposure to thorium residuals in the rights-of-way. The site owner is now developing the property for commercial uses including:

- condominiums
- theaters
- hotels
- underground parking

DISCUSSION

Contaminants of Interest

Thorium, a radioactive metal, is the contaminant of interest. The thorium contamination on the site was cleaned up to a level of 0.2 Bq over background levels of radiation for the top 5 centimeters of soil and for each 15-centimeter layer beneath; however, soil under the public rights-of-way was not included in the clean-up and still contains elevated levels of radiation.

Exposure Pathways

IDPH evaluates the environmental and human components that lead to exposure to determine whether nearby residents are exposed to contaminants migrating from a site. Radioactive material can affect people if they are exposed to sufficient levels of radiation for a sufficient time period. A source of radiation, a point of exposure, and an exposed population must all be present for exposure to occur.

USEPA evaluated the risk posed by the residual contamination and determined it does not pose a threat to human health as long as it is covered by asphalt or concrete and left undisturbed. If the covering is removed, the underlying soil must be properly managed to prevent exposure.

Persons using the public rights-of-way while walking twice per day, 5 days per week, 50 weeks per year would not be expected to be exposed to sufficient levels of radiation to cause adverse health effects. It is unlikely that persons would be exposed to sufficient levels of thorium-contaminated dust to experience an inhalation hazard.

The main exposure pathway considered is any future exposure that might occur if an attempt is made to access the utility lines running through the public rights-of-way adjacent to the site. If any excavation were to occur, utility or maintenance workers could inhale thorium-contaminated dust and would be exposed to radiation given off by contaminants in the soil. USEPA and the city of Chicago are currently working on a notification method and monitoring method that would prevent workers from accessing contaminated soil in the area without appropriate notification and monitoring.

CONCLUSIONS

On the basis of the information reviewed, IDPH concludes that no apparent public health hazard currently exists at the former Lindsay Light II site. If the concrete, asphalt, or soil is removed from the area rights-of-way, workers may encounter thorium residuals. IDPH agrees that USEPA and the city of Chicago plans to create a worker notification procedure to reduce the chance of future exposure.

RECOMMENDATIONS AND PUBLIC HEALTH ACTIONS

IDPH recommends that the city of Chicago and the responsible parties enter into a binding Right-of-Way Agreement proposed by USEPA to reduce the chance of future exposure to thorium residuals. The proposed actions include:

- restricting routine and emergency access to the residual contamination,
- notifying all utilities and affected city departments of the presence of contamination,
- the city providing written notice whenever anyone requests a permit to work in the right-of-way,
- establishing and maintaining a database to notify anyone requesting access to the right-of-way that radiation surveillance will be necessary,
- including a notice in the city plat book showing the right-of-way contamination and an explanation that the right-of-way must not be disturbed without contacting the city,
- and placing and maintaining placards that state: "Before work, Contact Chicago Department of Transportation."

USEPA and the city of Chicago plan to enter into a binding Right-of-Way Agreement later this year. Because an inhalation health risk may also be present, we recommend that the city also include an air monitoring program where appropriate during any work in the right-of-way.

REFERENCES

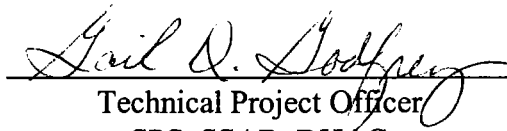
1. USEPA. Action Memorandum. September 22, 1999.
2. USEPA. Action Memorandum. April 22, 1995.

PREPARERS OF REPORT

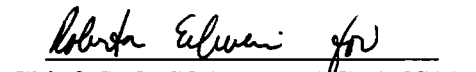
Ken Runkle
Jennifer Davis
Environmental Toxicologists
Illinois Department of Public Health

CERTIFICATION

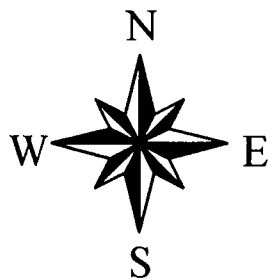
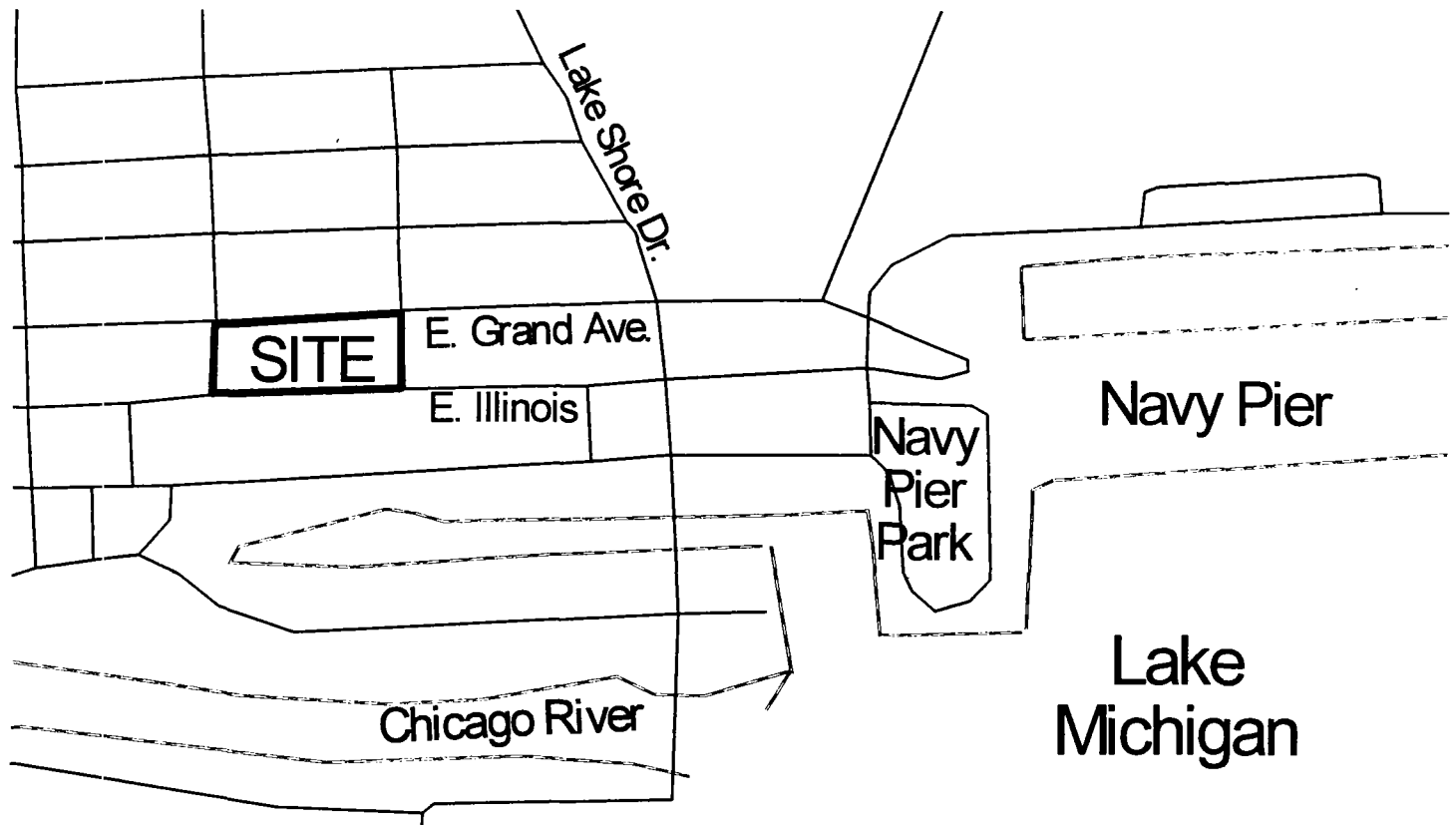
This Lindsey Light II Health Consultation was prepared by the Illinois Department of Health under Cooperative Agreement with the Agency for Toxic Substances and Disease Registry. It is in accordance with approved methodology and procedures existing at the time the Health Consultation was initiated.


Technical Project Officer
SPS, SSAB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this Health Consultation and concurs with its findings.


Chief, SPS, SSAB, DHAC, ATSDR

Location of Lindsay Light II Chicago, Illinois



Source: IDPH GIS